ARTICLE

"Gimme Some Truth"

AI Music and Implications for Copyright and Cataloging

Adam Eric Berkowitz

ABSTRACT

For the past 70 years, researchers and experimental musicians have been working with computer-synthesized music, forming a collaborative relationship with generative artificial intelligences known as human–AI co-creation. The last several years have shown that musical artists are quickly adopting AI tools to produce music for AI music competitions and for commercial production of songs and albums. The United States Copyright Office, in response to this trend, has released its latest policy revisions to clearly define what is eligible for copyright registration. Soon after, the Program for Cooperative Cataloging (PCC) also released new guidelines, providing recommendations for how library catalogers should address AI-generated materials. In both cases, they reject the notion of considering AI as a contributor. The language in each of these policies, however, is self-contradicting, showing that they are ill equipped to address generative AI. This study leverages critical textual analysis and qualitative content analysis and uses case examples to probe the manner in which these policies regard generative AI. Recommendations are made for addressing shortcomings in the PCC's policies, and moral philosophical frameworks such as virtue ethics and consequentialism support arguments for supplementing catalog item records with information from authoritative external sources, deviating from this policy for the sake of truth-seeking.

INTRODUCTION

Over the last several years, significant advancements in the field of music information retrieval (MIR) have made technologies that autonomously generate music commercially viable. Experiments in the design of generative artificial intelligence (AI) with the ability to produce music have been ongoing since the mid-1950s. The earliest notable examples include Klein and Bolitho's *SuperCollider* algorithm, which was able to produce 4,000 pop songs in a single hour, and Hiller and Isaacson's use of Markov chains to compose a string quartet titled *Illiac Suite*.[1] Since these first attempts, approaches to AI music have grown to include grammars, symbolic knowledge-based systems, artificial neural networks and deep learning, and self-similarity and cellular automata.[2] Today, there are over a dozen AI music-composing products on the market such as Iamus, Mubert, AIVA, Endel, Amper, AlgoTunes, Popgun, Amadeus Code, Boomy, Humtap, Ludwig, HumOn, WaveAI, Melodrive, LifeScore, AI Music, Xhail, and Jukedeck.[3]

Berkowitz indicates that musicians around the world are in the process of adopting AI tools, incorporating them into their songwriting practices. He discusses a method called human–AI co-creation and points to the last three years of AI music competitions, such as the AI Song Contest and AI Music Generation Challenge, summarizing how AI research teams and musical artists collaborate on the design of AI music tools for the purposes of writing human–AI co-created music.[4] Micchi et al. explain, "As an alternative to fully automated music generation … an

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algorithm is rather used as a *tool* by a composer…. The AI system generates a set of musical fragments, one of which will eventually be selected and possibly re-shaped by the composer to meet a specific musical need."[5]

Commercialized AI songs and music albums have also permeated the market. Avdeeff; Barbican Centre; Clancy; and Sturm et al. cumulatively name 19 different songs and albums.[6] Holly Herndon, for example, is an AI music pioneer who graduated with her PhD from Stanford University's Center for Computer Research in Music. Since releasing her AI-generated music album *Proto* in 2019, she has been creating and refining Holly+, an artificial neural network trained on her own voice imprints that is capable of "perfectly tuned and ethereal" singing.[7] Taryn Southern is another example. Since starting her career as a YouTuber, she has been fascinated by the combination of emergent technology and musicianship, and her work on a documentary project about the human brain inspired her to engage with artificial intelligence, leading to her first AI-generated album *I AM AI* in 2018.[8]

Generally, once creative works are finished and ready for distribution, creators apply for copyright registration, and once registration is granted, those works begin penetrating the market. Libraries acquire those items from the market, which necessitates accurate descriptions during the cataloging process before they are made available to patrons. The information provided by producers during copyright registration impacts what information is available about the material for item records. Given the prevalence of generative AI, AI music is making its way into library catalogs. Specific examples of AI music in library catalogs are explored later in this article; although, it should be noted that music is being used here as a backdrop for any works of artistic or creative expression.

Recently published policies, however, are insufficient for the task of describing AI music items in such a way as to ensure that both accuracy and transparency are reflected in item records. It is, therefore, necessary to critically assess the entire chain of events beginning from copyrighting an AI-generated work to cataloging that work. This introduction briefly describes how AI music is gaining prominence whereas the following sections explore how AI music is regarded under US copyright law and how that translates to the way AI music is cataloged. This study leverages critical textual analysis and qualitative content analysis and relies on case examples in its assessment of current policies and practices concerning copyrighting and cataloging AI music. Upon demonstrating how these policies embody opposing values, this study sets forth truth-seeking as a public good to be maximized, encouraging catalogers to deviate from established policies by relying on moral philosophy and overlooked best practices when cataloging AI music as well as other AI-generated materials.

GENERATIVE AI AND COPYRIGHT LAW

The United States Constitution claims under article 1, section 8, clause 8 that Congress retains the power to pass legislation in order "to promote the progress of science and useful arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries."[9] Congress, exercising its powers per the "science clause," passed the US Copyright Act in 1790.[10] Since then, additional copyright laws have been enacted, often elicited by technological development.

Generative AI possesses the ability to disrupt the music consumer market, the music recording industry, and copyright law. Artists, industry leaders, and lawmakers' concerns surrounding generative AI are twofold. For one, they argue that the data which is used for AI training violates

copyright law because the use of copyrighted music to train generative AI represents an unauthorized use of said music; however, there is reason to believe that using copyrighted content for AI training constitutes transformative use in accordance with the Fair Use Doctrine.[11]

The second issue pertains to the essence of AI music and can be boiled down to a single question: Who exactly owns the rights to AI music? Perhaps ownership should be awarded to the software engineers, or the users, or the AI systems themselves, or the collective group of musicians whose music is used for training these systems.[12] The United States Copyright Office does not recognize non-human authorship, which has led scholars to suggest that AI music would belong to the public domain; however, it should be noted that no federal public policies explicitly say so.[13]

For added context on the matter, other jurisdictions are also considered. In the United Kingdom, South Africa, Hong Kong, India, Ireland, and New Zealand, copyright laws point to AI-generated content belonging to either the software programmer or the user, and similar to the US, legal scholars in the European Union argue that AI content is ineligible for copyright protection, likewise suggesting that it belongs to the public domain.[14] In China, however, recent court rulings have determined that copyright ownership is awarded to AI users.[15]

GENERATIVE AI AND THE US COPYRIGHT OFFICE

Since the mid-1950s, the US Copyright Office's position on AI music has held fast to the notion that only human-authored works can be registered for copyright. In 1956, Klein and Bolitho's *SuperCollider* algorithm produced a pop song titled "Push Button Bertha," and in their attempt to have it registered for copyright, the Copyright Office rejected their application stating that non-human-authored works are ineligible for copyright protections.[16] Due to the rapidly spreading adoption of generative AI and a recent decision on the human–AI co-created graphic novel *Zarya of the Dawn*, the Copyright Office reiterated and extensively expanded upon its stance against registering works authored by non-humans in recently published guidelines.[17]

As a recent and high-profile example of human–AI co-creation, *Zarya of the Dawn* is discussed here within the context of human artistry and, similar to Klein and Bolitho's "Push Button Bertha," it is an AI-generated work submitted to the US Copyright Office for copyright registration. Both of these were (partially) denied copyright registration because they are works created with AI. Therefore, how the US Copyright Office regards one work of human or AI authorship would naturally extend to all works as a matter of policy. To better understand the Office's policy, it is important to further discuss *Zarya of the Dawn*'s role in prompting the Copyright Office's policy revisions. The following is a summary of the Office's review of *Zarya of the Dawn*, including the correspondence between Robert J. Kasunic, representing the Copyright Office, and Van Lindberg, representing Kris Kashtanova, the author of the human–AI co-created graphic novel.[18]

Zarya of the Dawn

On September 15, 2022, Kris Kashtanova was granted a copyright registration certificate for her graphic novel *Zarya of the Dawn*. In the words of Kasunic, Kashtanova applied for copyright registration and claimed to be the "sole author."[19] Subsequently, she made public statements in an interview, indicating that the illustrations for her graphic novel were created via generative AI. The interviewing reporter contacted the Copyright Office about this, and the Office responded by revoking Kashtanova's copyright registration because, according to Kasunic, "by [her] own admission, [she is] not the sole author of the entire work and, at a minimum, the claim should have been limited to exclude non-human authorship."[20]

Kasunic argued that in the application for copyright registration, Kashtanova identified herself as the author but left the Limitation of Claim and Note to Copyright Office fields blank. He went on to explain that it was in these fields where Kashtanova should have indicated that she used the AI program MidJourney to create the illustrations for her work, or she should have included a cover letter explaining the circumstances under which *Zarya of the Dawn* was created, namely that it was a human–AI co-created work. He did note that the word MidJourney appears on the cover of the novel but that "there is no indication of the intent or meaning of the word…."[21] He went on to say that MidJourney is named in one of 18 submitted files, but without any context, it was not clear to the application's reviewer that Kashtanova had used generative AI to create the illustrations.

Lindberg, on behalf of Kashtanova, appealed the decision by showing the lengths Kashtanova went to in manipulating text prompts and other steerable parameters to generate the desired imagery. He claimed that she worked with MidJourney for over a year to curate the images she selected for her graphic novel. He also indicated that she used image-editing software, specifically Adobe Photoshop and Cinema 4D, to further customize the images. This process is very similar to how Micchi et al. define human–AI co-creation in their assessment of the AI Music Generation Challenge, and it echoes how Taryn Southern described her process in creating her 2018 *I AM AI* music album. She says:

> "The process is different depending on the AI platform I'm working with…. In terms of working with the music, it's not like you just press a button and a beautiful song is created. There is a certain amount of binary decision making by the human—BPM, rhythm, key, mood, instrumentation—and then the AI generates possibilities. Of those possibilities, you pick the ones you like and then dump the ones you don't. It's then up to me to arrange the pieces in to a song structure to fit the lyrics."[22]

Lindberg claimed that the time and effort exerted to create and manipulate the images constitute originality and human work. Furthermore, Lindberg argued that Kashtanova's use of MidJourney and other imaging software is akin to a photographer's use of a camera, citing *Burrow-Giles Lithographic Co. v. Sarony* as legal precedent. He further asserted that should the Copyright Office determine that the illustrations are not copyrightable, the work as a whole should retain its copyright as a compilation, a work which shows originality through the author's curation and arrangement of preexisting materials or data.

Kasunic, however, disagreed and stated, "Copyright protection cannot serve 'a reward for the hard work that went into' creating an otherwise unprotectable work, because otherwise 'sweat of the brow' would permit copyright to extend further than the author's original contributions."[23] Referencing descriptions regarding how MidJourney operates, how Kashtanova used MidJourney and other image-editing tools, and standing legislation and case law, Kasunic concluded that generative AI is more than just an assistive tool. He based the majority of his rebuttal on the fact that artists, writers, and photographers do not necessarily arrange or adjust their works after the fact, but for a MidJourney user to claim creative originality, such a post-production process is required. He further explained that human artists are able to actualize preconceptions of their works, and they have full control of the creative process. In contrast, a MidJourney user has no control of the creative process aside from the textual prompts serving as inputs and the selection and arrangements of MidJourney's outputs.

The Copyright Office closed its investigation on February 21, 2023. The Office concluded that Kashtanova is the author of the text as well as the arrangement of the images, which is reflected in

Lindberg's argument that *Zarya of the Dawn* is a compilation. Furthermore, Kashtanova is not the author of the images as the Copyright Office holds that the works of non-human authors are not eligible for copyright registration. As such, the copyright registration certificate was changed to reflect this but retained its original registration date of September 15, 2022.

Copyright Registration Guidance: Works Containing AI Material

The US Copyright Office's guidelines on registering works created with the aid of AI went into effect on March 16, 2023, following its decision on the copyright registration of *Zarya of the Dawn,* a human–AI co-created graphic novel by Kristina Kashtanova.[24] The Copyright Office claims that because it has been in operation since 1870, per US Code 17, the US Copyright Act, it bears the authority and necessary expertise to distinguish between copyrightable and non-copyrightable works. Furthermore, the Office acknowledges that with technological advances come the emergence of new trends impacting creative works and how works are to be evaluated and, therefore, the Office deems it necessary for applicants to disclose additional information regarding the creative process.

The policy points to generative AI as the latest in a long line of technologies which have influenced human creativity, and it describes generative AI as a classification of software trained on a massive corpus of human-rendered works that is then prompted by a user to produce a complete, and perhaps artful product. The Copyright Office contends that for a work to be copyrightable, it must have a human author, and any works generated entirely by an autonomous machine cannot be registered for copyright. The policy lists examples of denied applications and makes special note that in the case of *Zarya of the Dawn*, the application was accepted but pertains only to the text portions of the work, not the accompanying imagery. As such, the Office explains in no uncertain terms what human authorship means and how best to disclose that AI has been used in the creative process when applying for copyright registration.

The policy lists several descriptions and definitions for human authorship gathered from relevant court cases. The summation of the argument is that human authorship requires human control and ingenuity. An AI program which autonomously generates a product cannot be considered humanly controlled because the user does not have foreknowledge of what the AI program will generate. Therefore, any works which have been generated in whole by AI do not meet the Copyright Office's requirements for registration; however, works which bear both human authorship and AI renderings may register for copyright, but only the human-authored portions can be registered.

The policy then instructs applicants on how to complete a standard application for copyright registration, noting that descriptions of where and how AI is used in the creative process should be disclosed in various fields. It also explains how copyright registration certificates for works which were (partially) generated by AI can be retroactively corrected. The policy concludes by noting that as new developments in the regulation of AI content emerge, the Copyright Office will update its policies accordingly.

Critiquing the US Copyright Office's Policies

There are three key issues to point out here in both the US Copyright Office's decision on *Zarya of the Dawn* and the recently published guidelines for authors using generative AI. First, it is important to discuss what kind of power the Copyright Office is able to exert in its enforcement of copyright laws and from what source that power is granted. Understanding the nature of the Office's power naturally leads to an assessment of what power it actually exerts in its policies.

Discussion must, therefore, also include an analysis of the language used in its decisions and policies.

According to the introduction of its copyright registration guidelines, the Copyright Office is granted the authority to register works for copyright protection by the US Copyright Act and, therefore, Congress is the source of the Office's power.[25] The Office does not legislate, nor does it rule on cases in such a way that it would produce new laws or interpretations of laws. As noted in the conclusion of its guidelines, the Office's policies are dictated by existing Federal regulations, making its ability to enforce these regulations an example of instrumental power.[26]

Given that the Copyright Office's policies guide and inform on how its power is exerted, its guidelines should be considered an example of institutional policy. Its power, though, ends with the ability to determine what is eligible and ineligible for copyright registration. In its decision letter and in its guidelines, the Office makes no mention of any repercussions for authors who deliberately withhold information about the use of generative AI in their works.[27]

The Copyright Office's guidelines require applicants to disclose information regarding their use of AI in creating works, but there is nothing compulsory about these directives. For example, no disciplinary action was levied against Kashtanova after it was discovered that she failed to disclose her use of MidJourney to illustrate *Zarya of the Dawn*.[28] The Copyright Office's policy is entirely predicated upon self-reporting with no actual power to enforce it and depends on the ability of the Office, as a longstanding and trusted institution, to inspire authors to act honestly and earnestly as they submit copyright registration applications. As such, the Office's power is less so instrumental and more so symbolic.[29]

Additionally, the Copyright Office's decision to refer to AI as a non-human author as opposed to a tool is problematic. The Office states that AI cannot be counted as an author because it is not human, but the human controlling the AI cannot be granted sole authorship because the AI is more like a collaborator than an assistive tool. The Office's policy reads:

> "If a work's traditional elements of authorship were produced by a machine, the work lacks human authorship…. When an AI technology receives solely a prompt from a human and produces … works in response, the 'traditional elements of authorship' are determined and executed by the technology…. These prompts function more like instructions to a commissioned artist."[30]

Furthermore, in the decision letter to Kashtanova, Kasunic says the following:

> "We are initiating cancellation of US Copyright Office Registration VAu001480196 because by your own admission, you are not the sole author of the entire work and, at a minimum, the claim should have been limited to exclude non-human authorship."[31]

While it is ethical to say that AI cannot be held responsible for creative works, calling AI a non-human author in the way these documents do suggests that AI is an author but of a non-human sort. For example, Kasunic asserts that Kashtanova is not the sole author, suggesting that she co-authored *Zarya of the Dawn* when she most certainly did not, and the Copyright Office's policy calls AI a commissioned artist, which echoes Holly Herndon's explanation of how it feels when working with generative AI. She says:

> "In traditional algorithmic music, there may be randomisation, but with machine learning, even though there is an element of chance, there is a logic to it. It can surprise you, but it feels much more ordered, which I found interesting and attractive because there would be certain moments where I would feel like I fully understood the logic of why the machine came to that conclusion.... It is highly collaborative and intimate in that way...." [32]

The guidelines, as such, is a self-conflicted document. The Copyright Office appears to want to protect authorship, artistry, and creativity as virtues of humanity. In its attempt to do so, though, the Office has jeopardized those virtues by saying AI-generated works are ineligible for copyright registration because AI systems are not human as opposed to saying that AI is incapable of demonstrating human levels of agency. This distinction makes non-human authorship a categorical description as opposed to a characteristic precluding responsibility for authorship.

The implications presented when stating that AI is recognized as a non-human author presumably identifies AI as an entity capable of human-level agency. Such a distinction would mean that an AI system can be held responsible for its actions, which shifts the burden of culpability from corporate developers to the AI system itself. Given that AI systems are now being used in a variety of industries to make decisions which bear life altering consequences for the public, it is far more important to state that AI can never be recognized as a sentient or conscious agent, both legally and symbolically, as opposed to identifying AI as a non-human agent. The alternative would result in dire consequences for society.

CATALOGING AI MUSIC

While there is no precedent for regulating how to catalog works created with or by generative AI, library organizations which explore and help establish best practices have investigated how to treat other non-human agents (e.g., animals, spirits, fictitious characters, etc.) with regard to crediting them as contributors to a work. For example, in 2017, the International Federation of Library Associations and Institutions (IFLA) adopted definitions for agent and person. An agent is "an entity capable of deliberate actions, of being granted rights, and of being held accountable for its actions," and a person is a subcategory of agent, defined as "an individual human being" and "restricted to real persons who live or who have lived."[33] The latter part of this definition is meant to distinguish persons from fictitious and literary characters.

The description for agent further states, "Human beings are directly or indirectly the motive force behind all such actions taken by all *agents*," and by "such actions," it refers to the capability of producing expressive works.[34] Additionally, it says that automatons are "technological agents … viewed as tools used and set up by an actual *agent*,"—that is, a human being.[35] It specifically identifies software translation programs as an example of automatons. Today, that would include software programs like Amazon's Alexa and OpenAI's ChatGPT, AI programs powered by large language models and natural language processing, which suggests that generative AI would fall under the same category. Here, IFLA is effectively stating that the only agent that can be held responsible for its own actions is a human being, and furthermore, automatons, such as generative AI, are exclusively tools to be manipulated by human beings.

In comparison to the US Copyright Office's policies, IFLA established a clear scope for what constitutes a human agent and what constitutes an AI agent (i.e., automaton). Whereas IFLA clearly stated that humans are the only actors capable of creating expressive works and AI is merely a tool leveraged by humans, the US Copyright Office could not clearly define what an AI agent is, determining that it was more than a tool but still not an agent in the sense that it could be

credited with authorship. It should be noted that copyright is a legal mechanism and, therefore, generative AI cannot be granted copyright ownership because AI software cannot own property; however, the criticism here is that while this is conceivably true, the Copyright Office did not make the determination that AI is a tool, instead comparing it to human actors (i.e., commissioned artist and co-author) to justify its decision. As such, IFLA grants clarity on an issue concerning AI creativity while the Copyright Office is ambiguous on the matter.

In the year following IFLA's adoption of descriptions for agent and person, Resource Description and Access (RDA), in 2018, attempted to integrate these definitions into its toolkit for MARC 21 cataloging. The RDA Steering Committee specifically focused on how to treat pseudonyms and animals as non-human personages. Their goal was to align RDA practice with IFLA's "definition of Person while still providing practical methods for libraries that must deal with non-human personages presented as having relationships other than subjects to [works or manifestations of creative expression]."[36] IFLA's and the RDA Steering Committee's efforts to define agency and personhood impact how other library institutions and organizations develop cataloging policies and guidelines.

A year after the US Copyright Office published its aforementioned policies, the Program for Cooperative Cataloging (PCC), in 2024, released its own guidelines on how libraries should catalog works generated by AI. The way materials are copyrighted is indicative of authorship, showing how creative credit for a work is shared amongst various parties. It, therefore, directly impacts how commercial items are described in library catalogs. Here, the PCC sets forth policy which similarly states that AI should not be considered a contributor of a work.

Cataloging of Resources Generated Using AI

The PCC's guidelines, published on February 8, 2024, explain the following three points which catalogers should consider when describing AI works: 1) Named AI systems should be regarded as related works, not as human contributors; 2) Named parties responsible for engineering, hosting, and/or using the AI system should be listed as contributors; 3) If the named contributors appear to be pseudonymous, assume that they are human contributors even when the names of contributors appear to refer to AI systems. Following these three items, the guidelines offer several recommendations concerning which fields in a MARC 21 item record should be used to list the names of generative AI.[37]

The first and third points appear to lead to contradicting outcomes. Cataloging requires that the cataloger have explicit knowledge of the item in order to create a complete description. Descriptors for the various fields are taken from the item itself—that is, the item label, the item container, and any documents included with them such as inserts, pamphlets, and brochures. This, however, relies on transparency from producers regarding creative processes.

As seen in the previous case study involving *Zarya of the Dawn*, not only did Kashtanova withhold information about the use of generative AI, she included the name MidJourney on the cover and nowhere else. Kasunic had the following to say regarding the initial review of Kashtanova's application:

> "In the space for 'author,' you identified yourself. Because the 'limitation of claim' and 'Note to C.O.' spaces on the application were left blank and there was no cover letter explaining how the work was created, the Registration Specialist examining the application had no reason to conclude that you were not the sole author of the entire work as stated on your application.… While the word 'Midjourney' appears on the cover page of the work, there is

> no indication of the intent or meaning of the word on the cover. Based on the information submitted, the Registration Specialist appropriately approved the registration…."[38]

Such lack of transparency would similarly prevent a cataloger from accurately describing an item because only the information from copyright registration would be found attached to the item. From a cataloger's perspective, in following the PCC's guidelines, Kashtanova would be listed as an author along with MidJourney for the very same reasons the Copyright Office's registration specialist approved Kashtanova's application—that is, decisions are based exclusively on the information provided.

Music Examples from WorldCat: Iamus and "Wind Down"

While *Zarya of the Dawn* has not been cataloged by any libraries, according to WorldCat, there are two pieces of music which have been cataloged in a way to suggest that AI is responsible for authorship.[39] According to its item record (OCLC no. 864109110), *Iamus* is a music album released in 2012 and authored by Melomics Ensemble, the London Symphony Orchestra, and Iamus. The song "Wind Down," according to its item record (OCLC no. 1337586110), was released in 2022 and authored by Endel and Hoopla.

Regarding *Iamus*, listing Melomics Ensemble and the London Symphony Orchestra would be appropriate as they represent human agents, but Iamus is a generative AI developed by Melomics Media.[40] The fact that it was included as an author suggests that perhaps the AI system was simply listed on the label, much like how MidJourney was named on the cover of *Zarya of the Dawn*, and the cataloger assumed it to be a third musical ensemble. In the case of "Wind Down," Hoopla is a well-known library vendor and streaming platform, and Endel is a generative AI system.[41] Given that neither Hoopla nor Endel are human actors, it is inappropriate to include either of them in the author field. The fact that no other human agents are listed in the item record suggests that no human parties were labeled anywhere on the item or in documents with the item. The only choice the cataloger was left with was to assume that one or both of the names referred to musical ensembles or pseudonyms for human actors.

In the words of Mark Scharff, a well-respected music cataloger from Washington University in St. Louis, "The item answers the questions we ask of it."[42] Catalogers describing both *Iamus* and "Wind Down," in accordance with point three in the PCC guidelines, may have assumed, without any indications suggesting otherwise, that Iamus and Endel, generative AI systems, were pseudonyms for human agents. As such, they were included in their respective author fields, but doing so rendered these item records in conflict with the first point in the PCC guidelines which states that AI systems should not be listed in any of the contributor fields. As such, the PCC's policy is not equipped to address the challenges posed by generative AI.

TOWARD AN ETHICAL RESPONSE

Policies for cataloging AI works cannot address the issue of ensuring transparency when creators withhold information about their use of generative AI, or in the case of the previous examples, when creators position AI in such a way as to suggest that they are human actors. Naturally, this arises from copyright laws and policies which do not incentivize creators to be forthcoming with such information. Instead, the US Copyright Office merely states in an institutional policy that such information is required and does not exert any consequences when it is discovered that creators were dishonest when registering their works for copyright, as seen in the case of *Zarya of the Dawn*. To make an attempt at facilitating any sort of transparency regarding the use of AI in

creative works, it falls upon the cataloger to describe the item as an AI-generated work, even when it is not explicitly apparent.

The American Library Association's Library Bill of Rights very clearly places truth-seeking in a position of central importance. It states, "Library resources should be provided for the … enlightenment of all people…. Libraries should challenge censorship…. Libraries should cooperate with all … resisting abridgment of free expression and free access to ideas…."[43] The Library Bill of Rights apply to all disciplines in librarianship, including cataloging, but in order to facilitate truth-seeking in cataloging, accuracy and transparency must be maximized, a task which the PCC's policy on cataloging AI-generated materials is ill equipped to address.

Because best practices and policies in librarianship are out of step with each other, catalogers, ideally under the guidance of their institutions, must take it upon themselves to deviate from the PCC's policy for the sake of facilitating truth-seeking. One ethical framework which does well under such circumstances is virtue ethics. Under virtue ethics, the practitioner should aim to do right by others and contribute to human flourishing, and in this case, human flourishing is achieved by facilitating truth-seeking.

Burgess encourages librarians to identify "exemplars of virtue in the profession and emulate their approaches."[44] A prime example for protecting another value central to librarianship—that is, patron privacy—is the "Connecticut Four." They were a group of four Connecticut-based library consortium executives who refused to comply with warrants presented by FBI agents requesting access to patron records in accordance with the USA PATRIOT Act.[45]

Eudaimonism ethics, a kind of virtue ethics, defines flourishing as "performing one's distinctive function well," and care ethics, another form of virtue ethics, encourages practitioners to consider (im)balances of power and positions of control.[46] Incomplete and/or inaccurate item records subvert truth-seeking, which places catalogers in positions of power and control and demonstrates how important it is that they perform their distinctive functions well.

It might be argued that adhering to policy means performing one's distinctive function well, but such a notion must be refuted. A "good" cataloger, defined as a cataloger who adheres to policy, is not necessarily a virtuous cataloger. According to virtue ethics, habitualizing good behavior does not assure a virtuous character. One must also consider ethical dilemmas and act in accordance with what will bring about flourishing or, in this case, maximize truth-seeking.[47]

Burgess argues that virtue ethics encourages librarians to see ideals, such as access to information and intellectual freedom, as virtues to incorporate into one's character as opposed to achievable goals, and by doing so, librarianship would be in a better position to flourish.[48] Likewise, incorporating virtue ethics into the professional conduct of catalogers sets up truth-seeking not as a task to accomplish but rather as the nature of the discipline. The virtuous cataloger must therefore disregard the PCC's policy for the sake of truth-seeking.

Virtuous catalogers may also lean on consequentialism, another ethical framework which promotes maximizing efforts toward an outcome with the aim of maximizing the greatest amount of good for the greatest number of people.[49] Such a task asks the cataloger to redefine cataloging practices for AI content in accordance with the goal of maximizing truth-seeking. Catalogers leveraging consequentialism establish truth-seeking as a utility, prioritizing what will contribute the greatest good to society.[50]

To accomplish this, catalogers should standardize the use of external authoritative sources when describing AI-generated items, and when information regarding the use of generative AI has been discovered, catalogers should include this in the general notes field (i.e., 500_$a). Metadata curation practices promoted by RDA acknowledges that information from outside the "chief source" or "preferred source," indicators for the resource being described, is necessary for a complete description, such as when describing a photograph or sculpture. Under such circumstances it is recommended that "if data is taken from outside the resource, it is enclosed in square brackets. For some elements, the data can come from 'any source.'"[51]

Furthermore, librarians already address library materials challenges, recommend books for readers' advisory, and determine which items to acquire for the library's collection with the aid of external sources such as bibliographies, consumer reviews on commercial websites, and professional reviews from fellow librarians and relevant professional associations. Catalogers could similarly conduct research on the items they are cataloging. Producers maintain websites and critics publish reviews which can be used to ascertain how items were created, and more specifically, if those items were created with the use of generative AI.

Another option would be to borrow information from other iterations of more completely described items. For example, the item records in WorldCat for audio recordings of Hiller and Isaacson's *Illiac Suite*, which was previously mentioned, show indications that the music was produced with generative AI; please refer to OCLC nos. 3866433, 932581415, 34371693, 228683475, 316931169, 459011951, 835785466, 1070602321, and 253607681. The printed score, however, according to its item records in WorldCat, shows no indication of generative AI despite the fact that it is the first example AI-generated print music; please refer to OCLC nos. 671565298, 836741967, 1010429378, 474047431, 1066257287, 39039027, 2399842, and 612314619. For the sake of truth-seeking, it would seem a reasonable course of action to include information from the catalog records for the audio recordings in the catalog records for the scored music. The virtuous consequentialist cataloger would act on this.

CONCLUSION

For the better part of a century, researchers and musicians have experimented with AI music, but it is only now that thought leaders, scholars, industry executives, artists, and legislators are taking notice of the applications of such technologies. Technology always outpaces legislation; evidence of this can be seen in current institutional policies predicated upon the legal status of AI material. Copyright laws indicate that AI content is ineligible for copyright registration because the creative process is entirely controlled by a non-human entity. Simultaneously, though, copyright laws do not recognize AI as an assistive tool, leaving AI and the materials it generates somewhere in between and without any clear directive for how AI content should be regarded.

This has led to confusion among artists who incorporate AI content in their work. In the Copyright Office's review of Kris Kashtanova's *Zarya of the Dawn*, Robert J. Kasunic argued that AI offers the creative capabilities of a human artist without it being human itself. Therefore, the content AI generates cannot be considered the work of the user, nor can it be considered for copyright protection in its own right because it was created by a non-human author. The Copyright Office walks a very fine line in this judgment as it suggests that AI is not a tool because it exhibits agency.

Because disclosing the use of AI is voluntary, copyright registration policies are ill equipped to deal with ubiquitous adoption of AI tools. Kashtanova's use of MidJourney in making *Zarya of the Dawn* was only made apparent thanks to public statements she made; however, without those

statements, her original copyright registration, giving her full ownership of the narrative and the AI imagery, would still be in good standing. This issue obfuscates the truth of a work's authorship.

In turn, this impacts the way AI-generated materials are described in library catalogs. Item records, in accordance with the PCC's policy concerning AI-generated materials, are predicated upon the item itself, the item container, and accompanying documents. Just as Kashtanova was not forthcoming with information about using MidJourney, producers of various media finding their way into library collections likewise are not required to disclose the details of an item's creation. This leads to item records which are inaccurate or opaque, and sometimes both, by showing the names of AI systems in contributor fields or failing to indicate that AI has been used at all. It is a trend which stifles truth-seeking, a value of librarianship which has been described as a utility.

Virtue ethics coupled with consequentialism may provide the tools needed for catalogers to depart from or, better yet, improve upon the PCC's policy so that truth-seeking can be prioritized, especially when cataloging AI content. Virtue ethics allows the individual cataloger to define a new kind of best practice in accordance with the intrinsic value of truth-seeking, and consequentialism provides a path toward maximizing intended outcomes for the sake of maximizing truth-seeking as an intrinsic good for society. To this end, an argument has been made here for the use of external authoritative resources in the cataloging of AI-generated materials, which is in alignment with RDA practices.

Generative AI has the ability to produce fantastical material in a variety of media, which now includes text, imagery, audio, and video, and these systems, leveraging statistical probability, are unexpectedly convincing. Accurate and transparent item records grant patrons knowledge of how these materials were created, allowing them to establish value in and relationships with (i.e., ontology) those materials. Bibliographic records in library catalogs enable patrons to know the nature of media prior to consumption, and in that way, they act very much like nutrition facts on food packaging. It is important for the public to make itself privy to these matters as society wades through a reality characterized by post-truth, which has now been made ever more complicated by generative AI. A collective decision has yet to be made regarding the beneficence or hindrance that generative AI poses, but maximizing truth-seeking, with generative AI in mind, puts the public in the best position to make those moral and ethical judgments for itself.

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